

REMARKS

Claims 7-11 were pending in the instant application. The specification has been amended to include a table number. Claims 8-10 have been cancelled without prejudice. Claims 7 and 11 have been amended in order to claim more fully and distinctly the invention. Accordingly, claims 7 and 11 are currently pending in the present application. Support for the amended table number and claims can be found throughout the specification and claims as originally filed. Specifically, support for the amended table number may be found at least at page 48, line 7 and page 55, line 4. Support for the amended claim 7 may be found at least, for example, at page 7, line 30 through page 8, line 3. Support for the amended claim 11 may be found at least, for example, at page 5, lines 12-23. No new matter has been added.

Attached hereto is Appendix A, captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE". The attached Appendix includes a marked-up version of the changes made to the specification by the current amendment. Also attached hereto is APPENDIX B, including the full set of claims that are currently pending. Also attached hereto is APPENDIX C, including the SEQ ID NO:2 from U.S. Serial No. 60/044,185, filed March 24, 1997. Also attached hereto is APPENDIX D, including the SEQ ID NO:15 from U.S. Serial No. 09/062,142, filed March 17, 1998.

Amendment of the claims is not to be construed as an acquiescence to any of the rejections set forth in the instant Office Action, and was done solely to expedite prosecution of the instant application. Applicants reserve the right to pursue the claims as originally filed, or similar claims, in this or one or more patent applications.

Claim Rejections Under 35 U.S.C. §101

Claims 7-11 stand rejected under 35 U.S.C. §101 on the ground that the claimed invention is not supported by a specific asserted utility or a substantial utility. Applicants respectfully disagree and traverse the foregoing rejection for the following reasons.

Claims 8-10 have been cancelled, rendering the rejection moot with respect to these claims. Moreover, with respect to the presently pending claims 7 and 11, it is Applicants' position that a specific and substantial utility for the claimed invention is clearly set forth in the instant specification and the knowledge in the art at the time of Applicants' invention.

Applicants disclose in the instant specification a full-length cDNA which contains an open reading frame encoding the polypeptide of SEQ ID NO:3. Applicants assert in the instant specification that the protein has a significant degree of homology to trypsin-type serine proteases (see, *e.g.* page 50, lines 1-3). Moreover, functional analysis of this protein demonstrated urokinase activity upon transfection into COS7 cells (see, *e.g.* page 49, line 23-25), indicating that this protein shares the activities of urokinase-like proteins.

Urokinase-like proteins are a subgroup of the serine protease family of enzymes and include, but are not limited to, urokinase, streptokinase, vascular plasminogen activator and tissue plasminogen activator. These enzymes are well-known in the art by their mechanism of action, which is based on the formation of an acyl enzyme intermediate on a specific active serine residue. Specifically, urokinase-like molecules act as plasminogen activators, acting on plasminogen to generate plasmin. This activity is important for a number of biological functions, including wound healing, hemostasis and thrombolysis.

Applicants assert that novel molecules of the present invention can be used, for example, as modulators of hemostatic and thrombolytic activity, *i.e.* for dissolving or inhibiting formation of thromboses (see, *e.g.* page 33, lines 19-23) or modulating coagulation (see, *e.g.*, page 33, lines 13-19), or as modulators of tissue growth activity, *i.e.* for use in wound healing (see, *e.g.*, page 27, lines 6-8). Accordingly, the polypeptide of the present invention can be used for diagnostic and therapeutic purposes for disorders which involve any of these biological activities (see, *e.g.*, the specification, at least, for example, at page 29, lines 22-26 and page 33, lines 13-23).

The specificity of the asserted utilities is based on the fact that the polypeptide of the present invention belongs to the urokinase-like protein subfamily of serine proteases, a family sharing structural and functional characteristics which are not shared by other non-urokinase proteins. In particular, urokinases are known to act as plasminogen activators, cleaving plasminogen to generate plasmin. This activity is important for a number of biological functions, including wound healing, hemostasis and thrombolysis. Applicants respectively assert that these activities are specific to the urokinase subfamily of serine proteases and are not shared by all other protein-encoded nucleic acid molecules.

Moreover, no evidence has been made of record that Applicants' assertions regarding the activity and/or utility of SEQ ID NO:3 polypeptides as modulators of tissue growth activity, *i.e.*

wound healing, or hemostatic and/or thrombolytic activity would not be considered credible to one of skill in the art. As the Examiner is aware, an applicant must provide only one credible assertion of utility for any claimed invention to satisfy the utility requirement. The instant application teaches a specific and substantial biological function for the SEQ ID NO:3 polypeptides of the invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of the claims under 35 U.S.C. §101.

Claim Rejections Under 35 U.S.C. §112, first paragraph

Claims were rejected 7-11 under 35 U.S.C. §112, first paragraph. Specifically, the Office Action states that “[s]ince the claimed invention is not supported by either a specific and substantial utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.” Applicants respectfully traverse.

Without acquiescing to the alleged lack of enablement in the specification as originally filed, claims 8-10 have been cancelled, thus rendering the rejection moot. Applicants submit that the rejection with regard to these claims is therefore obviated.

With respect to newly amended claims 7 and 11, Applicants would like to make the following remarks of record. As argued above, the present invention is supported by a substantial utility and a well-established utility. Specifically, the asserted utilities are based on the fact that SEQ ID NO:3 polypeptides of the present invention are urokinase-like proteins, a subfamily of the serine protease enzyme family. Further, the specification is replete with teachings of how to make and/or use the present invention. For example, the specification teaches that novel molecules of the present invention can be used, for example, as modulators of hemostatic and thrombolytic activity, i.e. for dissolving or inhibiting formation of thromboses (see, *e.g.* page 33, lines 19-23) or modulating coagulation (see, *e.g.*, page 33, lines 13-19), or as modulators of tissue growth activity, i.e. for use in wound healing (see, *e.g.*, page 27, lines 6-8). Accordingly, the polypeptide of the present invention can be used for diagnostic and therapeutic purposes for disorders which involve any of these biological activities (see, *e.g.*, the specification, at least, for example, at page 29, lines 22-26 and page 33, lines 13-23). Applicants respectfully submit that any experimentation that may be required to make and/or use the

claimed polypeptide molecules constitutes routine, not undue, experimentation and therefore the specification clearly enables the pending claims.

Claims 8-11 were further rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Without acquiescing to the alleged lack of written description in the specification as originally filed, claims 8-10 have been cancelled, thus rendering the rejection moot as it applies to these claims. Claim 11 has been amended to depend from claim 7, thus rendering the rejection moot as it applies to this claim. Applicants submit that the rejection with regard to these claims is therefore obviated.

Claims 8-10 were also rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. Specifically, the Office Action states that while the specification is enabling for a protein encoded by SEQ ID NO:3, it does not enable a “polypeptide consisting of a fragment of a polypeptide comprising the amino acid sequence of SEQ ID NO:3” or “a polypeptide consisting of a naturally occurring allelic variant of a polypeptide comprising the amino acid sequence of SEQ ID NO:3” or “a polypeptide which is at least 60% homologous to a polypeptide encoded by the amino acid sequence of SEQ ID NO:3.”

Without acquiescing to the alleged lack of enablement in the specification as originally filed, claims 8-10 have been cancelled, thus rendering the rejection moot. Applicants submit that the rejection with regard to these claims is therefore obviated.

Claim Rejections Under 35 U.S.C. §112, second paragraph

Claims 8, 9 and 11 were rejected under 35 U.S.C. 35 §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Office Action states that claim 8 is rejected as vague and indefinite in the recitation of the phrase “fragment,” claim 11 is rejected insofar as it depends on claim 8, and claim 9 is rejected as vague and indefinite for reciting the phrases “allelic variant” and “stringent conditions.”

Without acquiescing to the alleged lack of definiteness in the specification as originally filed, claims 8 and 9 have been cancelled, thus rendering the rejection moot as it applies to these

claims. Claim 11 has been amended to depend from claim 7, thus rendering the rejection moot as it applies to this claim. Applicants submit that the rejection with regard to these claims is therefore obviated.

Claim Rejections Under 35 U.S.C. 102(e)

Claims 7-11 were rejected under 35 U.S.C. §102(e) as being anticipated by Sheppard (U.S. Patent No. 6,153,420). Specifically, the Office Action states that “Sheppard teaches a serine protease polypeptides [sic]. The polypeptide sequence (SEQ ID NO:18) described by Sheppard in U.S. Patent No. 6,153,420 (columns 41-44) has over 100% identity over its entire length to SEQ ID NO:3 of the instant invention. Therefore, the disclosure of Sheppard anticipates claims 7-11.” Applicants respectfully traverse.

Applicants respectfully submit that the cancellation of claims 8-10, without prejudice, renders the aforementioned rejection moot and request that the Examiner withdraw this §102(e) rejection as it pertains to these claims.

With respect to newly amended claims 7 and 11, Applicants submit the following remarks for the record. The polypeptide sequence (SEQ ID NO:18) was described by Sheppard in U.S. Patent No. 6,153,420 (‘420), filed May 4, 1998, which claims priority to U.S. Serial No. 09/062,142, filed March 17, 1998 and U.S. Serial No. 60/044,185, filed April 24, 1997. However, Applicants submit that SEQ ID NO:18 as described in the ‘420 patent is not entitled to these earlier priority dates.

First, U.S. Serial No. 60/044,185 discloses SEQ ID NO:2, which differs from the disclosed SEQ ID NO:18 of the ‘420 patent and SEQ ID NO:3 of the present invention in that it contains 2 different amino acids at positions 60 and 299, 4 unidentified amino acids at positions 80, 95, 96 and 149 as well as 9 additional amino acids at the C-terminal end (amino acids 365-373) (See attached Appendix C). Second, U.S. Serial No. 09/062,142 discloses SEQ ID NO:15, which differs from the disclosed SEQ ID NO:18 of the ‘420 patent and SEQ ID NO:3 of the present invention in that it also contains 9 additional amino acids at the C-terminal end of the polypeptide (amino acids 365-373) (See attached Appendix D). Therefore, because SEQ ID NO:18 is different from those sequences found in the applications from which priority is

claimed, Applicants respectfully submit that SEQ ID NO:18 is entitled to only the May 4, 1998 filing date of the '420 patent.

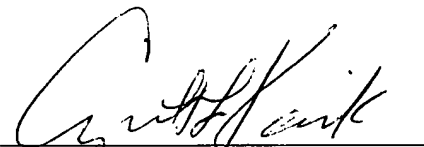
Applicants first described and disclosed the polypeptide SEQ ID NO:3 in the Japanese Patent Application JP 9/323129, filed November 25, 1997, which is *before* the May 4, 1998 priority date of the '420 patent by Sheppard. Therefore, Sheppard is unavailable as prior art against the instant application as it was filed *after* the priority date of the instant application. In view of the above, Applicants respectfully request that the Examiner withdraw the rejection of claims 7-11 under 35 U.S.C. §102(e).

CONCLUSION

If a telephone conversation with Applicants' attorney would help expedite the prosecution of the above-identified application, the Examiner is urged to call Applicants' attorney at (617) 227-7400.

Respectfully submitted,

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Date: February 8, 2002

APPENDIX A**Version With Markings To Show Changes Made****In the specification:**

The sentence on page 55, line 4 has been replaced with the following rewritten sentence:

-- Table 4--

In the claims:

Claims 7 and 11 have been amended as follows:

7. (Amended) An isolated polypeptide ~~comprising~~ consisting of the amino acid sequence of SEQ ID NO:3.

11. (Amended) The isolated polypeptide of claim ~~8~~ 7, further comprising heterologous amino acid sequences.

APPENDIX B**Pending Claims**

7. (Amended) An isolated polypeptide consisting of the amino acid sequence of SEQ ID NO:3.

11. (Amended) The isolated polypeptide of claim 7, further consisting of heterologous amino acid sequences.

APPENDIX C

FILE WRAPPER FOR PROVISIONAL U.S. APPLICATION

NO: **60/044,185**

INVENTOR: PAUL O. SHEPPARD
LAURA JELINEK
DONALD C. FOSTER

FILING DATE: MARCH 24, 1997

TITLE: SERINE PROTEASE POLYPEPTIDES AND MATERIALS AND
METHODS FOR MAKING THEM

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TECH CENTER 1600,2900

*RELATED U.S. APPLICATION DATA:

USSN 09/072,384 FILED MAY 4, 1998
US PATENT 6,153,420

US PROVISIONAL APPLICATION NO. 60/044,185
FILED APRIL 24, 1997 [Captioned file]

USSN 09/062,142 FILED APRIL 17, 1998
ABANDONED

*The related U.S. application data is drawn from the USPTO's public website and is not to be construed as a complete family of applications. Complete family information is available from the USPTO under 37 CFR §1.14.

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1634

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 392 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(v) FRAGMENT TYPE: internal

(ix) FEATURE:

(A) NAME/KEY: Signal Sequence

(B) LOCATION: 1...19

(D) OTHER INFORMATION:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

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Met Ala Gly Ile Pro Gly Leu Leu Phe Leu Leu Phe Phe Leu Leu Cys
              -15              -10              -5
Ala Val Gly Gln Val Ser Pro Tyr Ser Ala Pro Trp Lys Pro Thr Trp
              1              5              10
Pro Ala Tyr Arg Leu Pro Val Val Leu Pro Gln Ser Thr Leu Asn Leu
              15              20              25
Ala Lys Pro Asp Phe Gly Ala Glu Ala Lys Leu Glu Val Ser Ser Ser
30              35              40              45
Cys Gly Pro Gln Cys His Lys Gly Thr Pro Leu Pro Thr Tyr Lys Glu
              50              55              60
Ala Lys Gln Tyr Leu Ser Tyr Glu Thr Leu Tyr Ala Asn Gly Ser Arg
              65              70              75
Thr Glu Xaa Gln Val Gly Ile Tyr Ile Leu Ser Ser Ser Gly Asp Gly
              80              85              90
Ala Xaa Xaa Arg Asp Ser Gly Ser Ser Gly Lys Ser Arg Arg Lys Arg
              95              100              105
Gln Ile Tyr Gly Tyr Asp Ser Arg Phe Ser Ile Phe Gly Lys Asp Phe
110              115              120              125
Leu Leu Asn Tyr Pro Phe Ser Thr Ser Val Lys Leu Ser Thr Gly Cys
              130              135              140
Thr Gly Thr Leu Val Ala Glu Xaa His Val Leu Thr Ala Ala His Cys
              145              150              155
Ile His Asp Gly Lys Thr Tyr Val Lys Gly Thr Gln Lys Leu Arg Val
              160              165              170

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Gly Phe Leu Lys Pro Lys Phe Lys Asp Gly Gly Arg Gly Ala Asn Asp
 175 180 185
 Ser Thr Ser Ala Met Pro Glu Gln Met Lys Phe Gln Trp Ile Arg Val
 190 195 200 205
 Lys Arg Thr His Val Pro Lys Gly Trp Ile Lys Gly Asn Ala Asn Asp
 210 215 220
 Ile Gly Met Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Lys Pro His
 225 230 235
 Lys Arg Lys Phe Met Lys Ile Gly Val Ser Pro Pro Ala Lys Gln Leu
 240 245 250
 Pro Gly Gly Arg Ile His Phe Ser Gly Tyr Asp Asn Asp Arg Pro Gly
 255 260 265
 Asn Leu Val Tyr Arg Phe Cys Asp Val Lys Asp Glu Thr Tyr Asp Leu
 270 275 280 285
 Leu Tyr Gln Gln Cys Asp Ala Gln Pro Gly Ala Ser Gly Tyr Gly Val
 290 295 300
 Tyr Val Arg Met Trp Lys Arg Gln Gln Gln Lys Trp Glu Arg Lys Ile
 305 310 315
 Ile Gly Ile Phe Ser Gly His Gln Trp Val Asp Met Asn Gly Ser Pro
 320 325 330
 Gln Asp Phe Asn Val Ala Val Arg Ile Thr Pro Leu Lys Tyr Ala Gln
 335 340 345
 Ile Cys Tyr Trp Ile Lys Gly Asn Tyr Leu Asp Cys Arg Glu Gly Asp
 350 355 360 365
 Thr Val Phe Leu Pro Gly Ser Asn
 370

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

TGYACNGGNW SNHTNRT

17

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 17 base pairs
- (B) TYPE: nucleic acid

APPENDIX D

FILE WRAPPER FOR ABANDONED U.S. APPLICATION

RECEIVED

SERIAL NO: **09/062,142**

MAR - 5 2002

INVENTORS: PAUL O. SHEPPARD

TECH CENTER 1600/2900

FILING DATE: MARCH 17, 1998

TITLE: SERINE PROTEASE POLYPEPTIDES AND MATERIALS AND
METHODS FOR MAKING THEM

*RELATED U.S. APPLICATION DATA:

USSN 09/072,384 FILED MAY 4, 1998
US PATENT 6,153,420

US PROVISIONAL APPLICATION NO. 60/044,185
FILED APRIL 24, 1997

USSN 09/062,142 FILED APRIL 17, 1998
ABANDONED [Captioned file]

*The related U.S. application data is drawn from the USPTO's public website and is not to be construed as a complete family of applications. Complete family information is available from the USPTO under 37 CFR §1.14.

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Met	Ala	Gly	Ile	Pro	Gly	Leu	Leu	Phe	Leu	Leu	Phe	Phe	Leu	Leu	Cys
				-15				-10							-5
Ala	Val	Gly	Gln	Val	Ser	Pro	Tyr	Ser	Ala	Pro	Trp	Lys	Pro	Thr	Trp
		1					5					10			
Pro	Ala	Tyr	Arg	Leu	Pro	Val	Val	Leu	Pro	Gln	Ser	Thr	Leu	Asn	Leu
	15					20				25					
Ala	Lys	Pro	Asp	Phe	Gly	Ala	Glu	Ala	Lys	Leu	Glu	Val	Ser	Ser	Ser
30					35					40					45
Cys	Gly	Pro	Gln	Cys	His	Lys	Gly	Thr	Pro	Leu	Pro	Thr	Tyr	Glu	Glu
			50						55					60	
Ala	Lys	Gln	Tyr	Leu	Ser	Tyr	Glu	Thr	Leu	Tyr	Ala	Asn	Gly	Ser	Arg
		65					70					75			
Thr	Glu	Thr	Gln	Val	Gly	Ile	Tyr	Ile	Leu	Ser	Ser	Ser	Gly	Asp	Gly
		80					85					90			
Ala	Gln	His	Arg	Asp	Ser	Gly	Ser	Ser	Gly	Lys	Ser	Arg	Arg	Lys	Arg
	95					100					105				
Gln	Ile	Tyr	Gly	Tyr	Asp	Ser	Arg	Phe	Ser	Ile	Phe	Gly	Lys	Asp	Phe
110					115					120					125
Leu	Leu	Asn	Tyr	Pro	Phe	Ser	Thr	Ser	Val	Lys	Leu	Ser	Thr	Gly	Cys
			130						135					140	
Thr	Gly	Thr	Leu	Val	Ala	Glu	Lys	His	Val	Leu	Thr	Ala	Ala	His	Cys
			145					150					155		
Ile	His	Asp	Gly	Lys	Thr	Tyr	Val	Lys	Gly	Thr	Gln	Lys	Leu	Arg	Val
		160					165				170				
Gly	Phe	Leu	Lys	Pro	Lys	Phe	Lys	Asp	Gly	Gly	Arg	Gly	Ala	Asn	Asp
	175					180					185				
Ser	Thr	Ser	Ala	Met	Pro	Glu	Gln	Met	Lys	Phe	Gln	Trp	Ile	Arg	Val
190					195					200					205
Lys	Arg	Thr	His	Val	Pro	Lys	Gly	Trp	Ile	Lys	Gly	Asn	Ala	Asn	Asp
			210						215					220	
Ile	Gly	Met	Asp	Tyr	Asp	Tyr	Ala	Leu	Leu	Glu	Leu	Lys	Lys	Pro	His
		225						230					235		
Lys	Arg	Lys	Phe	Met	Lys	Ile	Gly	Val	Ser	Pro	Pro	Ala	Lys	Gln	Leu
		240					245					250			
Pro	Gly	Gly	Arg	Ile	His	Phe	Ser	Gly	Tyr	Asp	Asn	Asp	Arg	Pro	Gly
	255					260					265				
Asn	Leu	Val	Tyr	Arg	Phe	Cys	Asp	Val	Lys	Asp	Glu	Thr	Tyr	Asp	Leu
270					275					280					285
Leu	Tyr	Gln	Gln	Cys	Asp	Ala	Gln	Pro	Gly	Ala	Ser	Gly	Ser	Gly	Val
			290						295					300	
Tyr	Val	Arg	Met	Trp	Lys	Arg	Gln	Gln	Gln	Lys	Trp	Glu	Arg	Lys	Ile
			305					310						315	

Ile Gly Ile Phe Ser Gly His Gln Trp Val Asp Met Asn Gly Ser Pro
320 325 330
Gln Asp Phe Asn Val Ala Val Arg Ile Thr Pro Leu Lys Tyr Ala Gln
335 340 345
Ile Cys Tyr Trp Ile Lys Gly Asn Tyr Leu Asp Cys Arg Glu Gly Asp
350 355 360 365
Thr Val Phe Pro Pro Gly Ser Asn
370

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 1176 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

ATGGCNGGNA	THCCNGGNYT	NYTNTTYTN	YTNTTYTTY	TNYTNTGYGC	NGTNGGNCAR	60
GTNWSNCCNT	AYWSNGCNCC	NTGGAARCCN	ACNTGGCCNG	CNTAYMGNYT	NCCNGTNGTN	120
YTNCNCARW	SNACNYTNAA	YYTNGCNAAR	CCNGAYTTYG	GNGCNGARGC	NAARYTNGAR	180
GTNWSNWSNW	SNTGYGGNCC	NCARTGYCAY	AARGGNACNC	CNYTNCCNAC	NTAYGARGAR	240
GCNAARCART	AYYTNSWNTA	YGARACNYTN	TAYGCNAAYG	GNWSNMGNAC	NGARACNCAR	300
GTNGGNATHT	AYATHYTNSW	NWSNWSNGGN	GAYGGNGCNC	ARCAYMNGNA	YWSNGGNWSN	360
WSNGGNAARW	SNMGNMGNA	RMGNCARATH	TAYGGNTAYG	AYWSNMGNTT	YWSNATHTTY	420
GGNAARGAYT	TYTYNYTNAA	YTAYCCNTTY	WSNACNWSNG	TNAARYTNWS	NACNGGNTGY	480
ACNGGNACNY	TNGTNGCNGA	RAARCAYGTN	YTACNGCNG	CNCAYTGYAT	HCAYGAYGGN	540
AARACNTAYG	TNAARGGNAC	NCARAARYTN	MNGTNGGNT	TYYTNAARCC	NAARTTYAAR	600
GAYGGNGGNG	GNGGNGCNAA	YGAYWSNACN	WSNGCNATGC	CNGARCARAT	GAARTTYCAR	660
TGGATHMGNG	TNAARMGNAC	NCAYGTNCCN	AARGGNTGGA	THAARGGNAA	YGCNAAYGAY	720
ATHGGNATGG	AYTAYGAYTA	YGCNYTYTN	GARYTNAARA	ARCCNCAYAA	RMGNAARTTY	780
ATGAARATHG	GNGTNSNCC	NCCNGCNAAR	CARYTNCCNG	GNGGNMGNAT	HCAYTTYWSN	840
GGNTAYGAYA	AYGAYMGNCC	NGGNAAYTN	GTNTAYMGNT	TYTGYGAYGT	NAARGAYGAR	900
ACNTAYGAYY	TNYTNTAYCA	RCARTGYGAY	GCNCARCCNG	GNGCNWSNGG	NWSNGGNGTN	960
TAYGTNMGNA	TGTGGAARMG	NCARCRCAR	AARTGGGARM	GNAARATHAT	HGGNATHTTY	1020
WSNGGNCAYC	ARTGGGTNGA	YATGAAYGGN	WSNCCNCARG	AYTTYAAYGT	NGCNGTNMGN	1080
ATHACNCCNY	TNAARTAYGC	NCARATHTGY	TAYTGGATHA	ARGGNAAYTA	YYTNGAYTGY	1140
MGNGARGGNG	AYACNGTNTT	YCCNCCNGGN	WSNAA			1176